Amale AF/2800

Attorney's Docket No.: 07319-096001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Matt Beaumont
Serial No.: 09/778,242
Filed : February 6, 2001
Title : CALIBRATION FOR OPTICAL FILTER

Art Unit : 2872
Examiner : Arnel Lavarias

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

Applicant herewith files this Brief on Appeal, thus perfecting the Notice of Appeal which was originally filed on January 23, 2004. The headings and sections required by 37 CFR 1.192 follow:

(1) Real Party in Interest

The application is currently assigned to Production Resources Group Inc., who is, hence, the real party-in-interest.

(2) Related Appeals and Interferences

There are no known related appeals or interferences.

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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(3) Status of Claims

Claims 1, 2, 7 and 8 are pending. Each of these claims are rejected.

(4) Status of Amendments

A Response after Final was filed on December 23, 2003. In a subsequent Advisory Action, paper number 20040114, the Patent Office indicated that the Amendment after Final was not persuasive and would not place the case into condition for allowance.

(5) Summary of Invention

The present system relates to an optical filter with calibration that optical filter. Figure 1 shows an example of such a filter, with the last full paragraph on figure 2 explaining how that filter works. As explained in the third paragraph on page 3, each of the number of different luminaires should produce the same color. However, no two filters will, in general, be exactly the same (see column 4). Therefore, each of the filters 14 and 15 is calibrated based on a standard. In operation, page 5 explains how the filter is calibrated, and how a map of points is formed, see the third paragraph on page 4.

As explained at page 6, lines 4-5 "each map is unique to each filter". The filter information is then used a to show angular position as a function of cut on, see page 8, lines 1-3. In this way, the filters which are not in general exactly the same, will produce output colors which are compensated for the differences between the filters.

(6) Issues

Are claims 1-2 properly rejected under 35 U.S.C. 102(b) as being anticipated by Katagiri? Are claims 1-2 properly rejected under 35 USC 102(b) as being anticipated by Mactaggart? Are claims 7-8 properly rejected under 35 USC 103 as being unpatentable over Katagiri in view of So and/or Mactaggart in view of So?

(7) Grouping of Claims

None of the claims rise and fall together besides those specifically stated herein. Claims 1 and 2 rise and fall together.

(8) Argument

Rejections under Section 102

Rejection under Section 102(b) based on Katagiri.

Scope and contents

Katagiri teaches a light source and light generation technique. One aspect, described in column 22, is a wavelength tunable optical filter. Column 22 describes the wavelength tunable optical filters. In order to form a color, a location on the optical filter is found. As explained in column 22, lines 56-62, the ROM 134 stores data of center transmission wavelengths versus control parameters. This data is used to determine the bandwidth.

Differences between the prior art and the claims at issue.

Claim 1, for example, requires an optical device with an optical filter that has characteristics that vary across a gradient axis, a memory that stores calibration light, a filter moving element that moves the filter, and a filter moving element also includes servo electronics that correlate a list of specified colors to positions for the colors. Those positions are based on the calibration data that is individual to the specific optical filter.

However, with all due respect to the examiner's position, there is no teaching or suggestion of calibration data that is individual to the specific optical filter in Katagiri.

In the response to arguments in the last official action, September 25, 2003, at item 2, the rejection states that "Katagiri specifically teaches that calibration data specific to filter 90 is stored in ROM (see, for example, column 22, lines 5-63)". However, it is respectfully suggested that this contention is based on hindsight; not on the teaching of Katagiri. Note that in order to find calibration information, certain techniques are necessary as described above in the present description. One must find the specific position of the filters and where that specific position, or specific color, is. This is not simply a method of obtaining calibration information from some publicly available source; in fact, quite the contrary. Each optical filter needs to be individually tested, based on the realization that no two filters are exactly the same. Column 22, lines 6-65 teach the filters and how the filters carry out filtering by varying the center transmission wavelength based on the rotation angle (see column 22, line 21). This rotation angle must be set for a specific wavelength. The ROM 134 stores data of the center transmission wavelength versus the control parameters. There is no teaching or suggestion in

Katagiri, that this ROM includes calibration data which is specific to the individual filter.

In fact, it is respectfully suggested that it is logically inconsistent to think that such data could be stored in ROM. If the data were individual for each filter, ROM would make no sense. If one need to change filters, the ROM would make the unit worthless.

In any case, there is no calibration information stored in Katagiri. Katagiri simply stores a table of transmission wavelength versus control parameters. There is no teaching or suggestion that this includes information which is "individual to the specific optical filter in said optical device". In fact, a reasonable reading of Katagiri indicates that this read only memory is the same in each of the plurality of filters, and is not individual to the specific filter.

The rejection states that "calibration information" is mentioned in column 22. However, column 22 simply states that transmission wavelength versus control parameters are stored in ROM 134. It teaches nothing about calibration data "which calibration data relates to optical characteristics which are individual to the specific optical filter in said optical device". The word "calibration" is certainly never used.

Therefore, with all due respect to the Examiner's position, it is respectfully suggested that the contention that there is calibration data stored in ROM is based on hindsight, not on the teaching of Katagiri.

Rejection based on Mactaggart

Scope and contents of Mactaggart

Mactaggart teaches an infrared device using a continuous filter wheel that rotates to transmit a narrow band of information. The stepper motor 26 rotates the filter continuously in response to a signal, see column 2, lines 60-62. An integrating sphere then receives the IR information. The filter wheel includes an opaque portion which is used for timing. The basic system is then used to determine constituent particles.

Admittedly, Mactaggart uses the word "calibration table". However, it does so in a context which is very clearly different than the present specification. Moreover, it does not teach or suggest using the calibration table in the same way as claimed. Specifically, column 6, lines 62-67 state that "... each of the detector outputs is sampled at 64 different positions of filter wheel 24... These positions of filter wheel are 24 correlated

with wavelength by means of a calibration table (not shown) stored in memory.".

Differences between the prior art and the claims at issue

1) The calibration table as described simply includes a relationship between the positions of filter wheel, and wavelength. One having ordinary skill in the art would realize that this is simply a lookup table between filter positions and wavelength. There is no teaching or suggestion that this calibration data "relates to optical characteristics which are individual to the specific optical filter in said optical device...". Quite simply, even though the word "calibration" is used, there is no teaching or suggestion that the calibration is individual calibration, as claimed. Rather, the description of the calibration table is a description of a simple lookup table relationship between position and wavelength.

2) Claim 1 requires that the filter moving element moves the filter to change a position based on the calibration table. The filter moving element includes a motor and servo electronics driving the motor. That servo electronics includes a memory table with a list of specified colors and positions for those colors, where those positions include the calibration data. However, Mactaggart does not teach using that "calibration

table" to move the color wheel. Rather, Mactaggart uses the calibration table to interpret the measurements from the positions of the filter wheel, correlating those with wavelengths. It does not use the calibration table when moving the filter to a specified position, but rather uses the "calibration table" to evaluate the positions so obtained. Therefore, this is clearly the different claimed system, even if one could read many more limitations into "calibration" than are intended.

3) The memory table in claim 1 requires "a list of specified colors, and positions for the specified colors", while Mactaggart uses infrared. While the rejection makes an argument that center wavelength is correlated to color, there is no teaching or suggestion of maintaining a list of specified colors and positions, as claimed. Certainly there is teaching of center wavelength, but not a list of colors.

For each of these reasons, claim 1 should be allowable, along with claim 2 which depends therefrom.

Rejections of claims 7 and 8 under 35 USC 103.

Claims 7 and 8 specify the form of the calibration data. Claim 7 specifies that the calibration data is a table of points

indicating a specified position of a cut in curve, with claim 8 specified that the position is 50%. The rejection cites the additional reference to So and states that So shows a transmission table is stored as calibration data for a table in computer memory. Therefore, the hypothetical combination used for the rejection would include the limitations of Kartagiri and Mactaggart described above, combined with So.

Referring to column 3, line 62 through columns 6, line 65, of So, however, there is no teaching or suggestion in So of storing any kind of calibration information as a table of points indicating a specified position on a cut on curve or as a 50% position. So does describe a calibration table for a transmission ratio curve. See, for example, column 3, lines 50-55. The calibration table stores a transmission ratio (see, for example, column 4, lines 12-15 and lines 19-21. In fact, So explains that interpolation may be necessary if the transmission ratio that is measured falls between two of the values which are stored in the table. It is therefore apparent that this is a very <u>different kind of calibration system</u> than the present system.

Nowhere is there any teaching or suggestion in So that the calibration data is a table of points indicating a position in a cut on curve. Rather, So teaches different transmission ratios

and teaches nothing about a cut on curve. Nor is there any teaching or suggestion of the specified position being a 50% position as defined by claim 8. Therefore, these dependent claims define additional aspects which are nowhere taught or suggested by the hypothetical combination of the primary references with So.

In view of the above, and all due respect to the examiner's position in this matter, applicants respectfully suggest that the position of the Patent Office interprets the cited references although teach more than they actually do in fact teach. In fact, none of the references, either individually or combined, fairly teach or suggest the subject matter now claimed.

Therefore, and in view of the above amendments and remarks, all of the claims should be in condition for allowance.

The brief fee of $330 is enclosed. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Appendix of Claims

1. An apparatus, comprising:

an optical device including an optical filter having characteristics that vary across a gradient axis thereof; and

a memory unit, storing calibration data for the specific optical filter, which calibration data relates to optical characteristics which are individual to the specific optical filter in said optical device, and which affects the way said optical filter is used;

a filter moving element, which moves said filter to change a position of the gradient axis that intersects said optical axis and thereby change a characteristic of filtering, wherein said filter moving element is responsive to said calibration data,

said filter moving element including a motor, and servo electronics driving the motor, said servo electronics including a memory table which includes a list of specified colors, and positions for the specified colors, and wherein said positions include said calibration data.

2. An apparatus as in claim 1, further comprising an optical source, producing optical energy along an optical axis

thereof, said optical axis intersecting said gradient axis of said optical filter.

7. An apparatus as in claim 5, wherein said calibration data includes a table of points indicating a specified position in a cut on curve.

8. An apparatus as in claim 7, wherein said specified position is a 50 percent position.